

RUBBER COMPOSITION AND PROCESS FOR THE PRODUCTION THEREOF

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Abstract

The rubber composition of the invention is a vulcanizable blend obtained by microdispersing, in a molten state, a polyolefin resin (B) in an ethylene/ α -olefin/nonconjugated polyene copolymer rubber (A) comprising ethylene, an α -olefin of 3 to 20 carbon atoms and a nonconjugated polyene. In the rubber composition, a mean dispersed particle diameter of the polyolefin resin (B) is not more than 2 μ m, and a blending ratio of the component (B) to the component (A), $\bar{A}(B)/\bar{A}(A)$, is in the range of 5/95 to 50/50. By the use of the composition, the slightly microdispersible polyolefin resin (B) can be easily microdispersed by a kneading machine even when the composition is kneaded with additives such as reinforcing agent, filler, softener, vulcanization accelerator and vulcanizing agent. By the use of the composition, further, the polyolefin resin (B) can be reliably and sufficiently dispersed for a short period of time by a kneading machine conventionally used in the rubber industry, whereby a rubber product of high and stable quality can be readily supplied at low costs. The process for preparing rubber composition according to the invention comprises the steps of feeding a rubber mixture (E) which comprises 100 parts by weight of an ethylene/ α -olefin/nonconjugated polyene copolymer rubber (A) comprising ethylene, an α -olefin of 3 to 20 carbon atoms and a nonconjugated polyene and 3 to 10 parts by weight of an organic solvent (D) to a multi-stage vented extruder through its feed zone, feeding a polyolefin resin (B) to the extruder through another feed zone in an inert gas atmosphere, and kneading the rubber mixture (E) thus obtained and the polyolefin resin (B) and desolvating. According to this process, vulcanizable ethylene type copolymer rubber composition pellets, which comprise the ethylene/ α -olefin/nonconjugated polyene copolymer rubber (A) and the polyolefin resin (B), contain the polyolefin resin (B) sufficiently microdispersed and are free from blocking, can be easily obtained.

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